INSECT SODIUM CHANNELS FROM INSECTICIDE-SUSCEPTIBLE AND INSECTICIDE-RESISTANT HOUSE FLIES

ABSTRACT OF THE DISCLOSURE

The present invention is directed to isolated nucleic acid molecules encoding a voltage-sensitive sodium channel (VSSC) of *Musca domestica*, the VSSC being capable of conferring insecticide susceptibility or insecticide resistance to *Musca domestica*, as well as to the isolated voltage-sensitive sodium channels of *Musca domestica* encoded thereby. Nucleic acid molecules encoding insecticide susceptible VSSCs and nucleic acid molecules encoding insecticide resistant VSSCs are provided. Methods for increasing or decreasing the expression of functional voltage-sensitive sodium channels in host cells are also provided, as well as methods using the sodium channels. Also provided is a method for isolating other voltage-sensitive sodium channels.